Table of Contents: Volumes 18–21 (1995)

Volume 18, No. 1, January 1995

A Branch and Bound Incremental Conceptual Clusterer ..... *Arthur J. Nevins* 5

Probably Almost Discriminative Learning ..... *Kenji Yamanishi* 23

A Comparison of ID3 and Backpropagation for English Text-to-Speech Mapping ..... *Thomas G. Dietterich, Hermann Hild and Ghulum Bakiri* 51

Inferring Finite Automata with Stochastic Output Functions and an Application of Map Learning ..... *Thomas Dean, Dana Angluin, Kenneth Basye, Sean Engelson, Leslie Kaelbling, Evangelos Kokkevis and Oded Maron* 81

Research Note: Classification Accuracy: Machine Learning vs. Explicit Knowledge Acquisition ..... *Arie Ben-David and Janice Mandel* 109

Book Review: *Neural Network Perception for Mobile Robot Guidance* ..... *Geoffrey Towell* 115

A Reply to Towell's Book Review of *Neural Network Perception for Mobile Robot Guidance* ..... *Dean A. Pomerleau* 121

Volume 18, Nos. 2/3, February/March 1995

Special Issue on COLT '93
Guest Editor: Sally A. Goldman

Guest Editor's Introduction ..... *Sally A. Goldman* 127

Bounding the Vapnik–Chervonenkis Dimension of Concept Classes Parameterized by Real Numbers ..... *Paul W. Goldberg and Mark R. Jerrum* 131

Learning Fallible Deterministic Finite Automata ..... *Dana Ron and Ronitt Rubinfeld* 149

On the Complexity of Function Learning ..... *Peter Auer, Philip M. Long, Wolfgang Maass and Gerhard J. Woeginger* 187

Piecemeal Learning of an Unknown Environment ..... *Margrit Betke, Ronald L. Rivest and Mona Singh* 231

Learning from a Population of Hypotheses ..... *Michael Kearns and H. Sebastian Seung* 255

Volume 19, No. 1, April 1995

An Experimental Comparison of the Nearest-Neighbor and Nearest-Hyper-rectangle Algorithms ..... *Dietrich Wettschereck and Thomas G. Dietterich* 5

Monotonicity Maintenance in Information-Theoretic Machine Learning Algorithms ..... *Arie Ben-David* 29

Multivariate Decision Trees ..... *Carla E. Brodley and Paul E. Utgoff* 45

Encouraging Experimental Results on Learning CNF ..... *Raymond J. Mooney* 79

Volume 19, No. 2, May 1995

Automated Refinement of First-Order Horn-Clause Domain Theories ..... *Bradley L. Richards and Raymond J. Mooney* 95

Comprehension Grammars Generated from Machine Learning of Natural Languages ..... *Patrick Suppes, Michael Böttner and Lin Liang* 133

On Polynomial-Time Learnability in the Limit of Strictly Deterministic Automata ..... *Takashi Yokomori* 153

Volume 19, No. 3, June 1995

On the Learnability of Disjunctive Normal Form Formulas ..... *Howard Aizenstein and Leonard Pitt* 183

ALECSYS and the AutonoMouse: Learning to Control a Real Robot by Distributed Classifier Systems ..... *Marco Dorigo* 209

On the Stochastic Complexity of Learning Realizable and Unrealizable Rules ..... *Ronny Meir and Neri Merhav* 241

Volume 20, Nos. 1/2, July/August 1995

Special Issue on Bias Evaluation and Selection
Guest Editors: Marie desJardins and Diana F. Gordon

Evaluation and Selection of Biases in Machine Learning ..... *Diana F. Gordon and Marie desJardins* 5

Technical Note: Bias and the Quantification of Stability .... *Peter Turney* 23

Inductive Policy: The Pragmatics of Bias Selection ..... *Foster John Provost and Bruce G. Buchanan* 35

Recursive Automatic Bias Selection for Classifier Construction ..... *Carla E. Brodley* 63

The Appropriateness of Predicate Invention as Bias Shift Operation in ILP ..... *Irene Stahl* 95

Declarative Bias for Specific-to-General ILP Systems ..... *Hilde Adé, Luc de Raedt and Maurice Bruynooghe* 119

Shifting Vocabulary Bias in Speedup Learning ..... *Devika Subramanian* 155

Volume 20, No. 3, September 1995

Learning Bayesian Networks: The Combination of Knowledge and Statistical Data ..... *David Heckerman, Dan Geiger and David M. Chickering* 197

Learning Binary Relations Using Weighted Majority Voting ..... *Sally A. Goldman and Manfred K. Warmuth* 245

Support-Vector Networks ..... *Corinna Cortes and Vladimir Vapnik* 273

Volume 21, Nos. 1/2, October/November 1995

Special Issue on Applications in Molecular Biology
Guest Editors: Jude Shavlik, Lawrence Hunter and David Searls

Introduction ..... *Jude Shavlik, Lawrence Hunter and David Searls* 5

Genetic Algorithms, Operators, and DNA Fragment Assembly ..... *Rebecca J. Parsons, Stephanie Forrest and Christian Burks* 11

Discovering Dependencies via Algorithmic Mutual Information: A Case Study in DNA Sequence Comparisons ..... *Aleksandar Milosavljević* 35

Unsupervised Learning of Multiple Motifs in Biopolymers Using Expectation Maximization ..... *Timothy L. Bailey and Charles Elkan* 51

DEXTER: A System that Experiments with Choices of Training Data Using Expert Knowledge in the Domain of DNA Hydration ..... *Dawn M. Cohen, Casimir Kulikowski and Helen Berman* 81

Use of Adaptive Networks to Define Highly Predictable Protein Secondary-Structure Classes ..... *Alan S. Lapedes, Evan W. Steeg and Robert M. Farber* 103

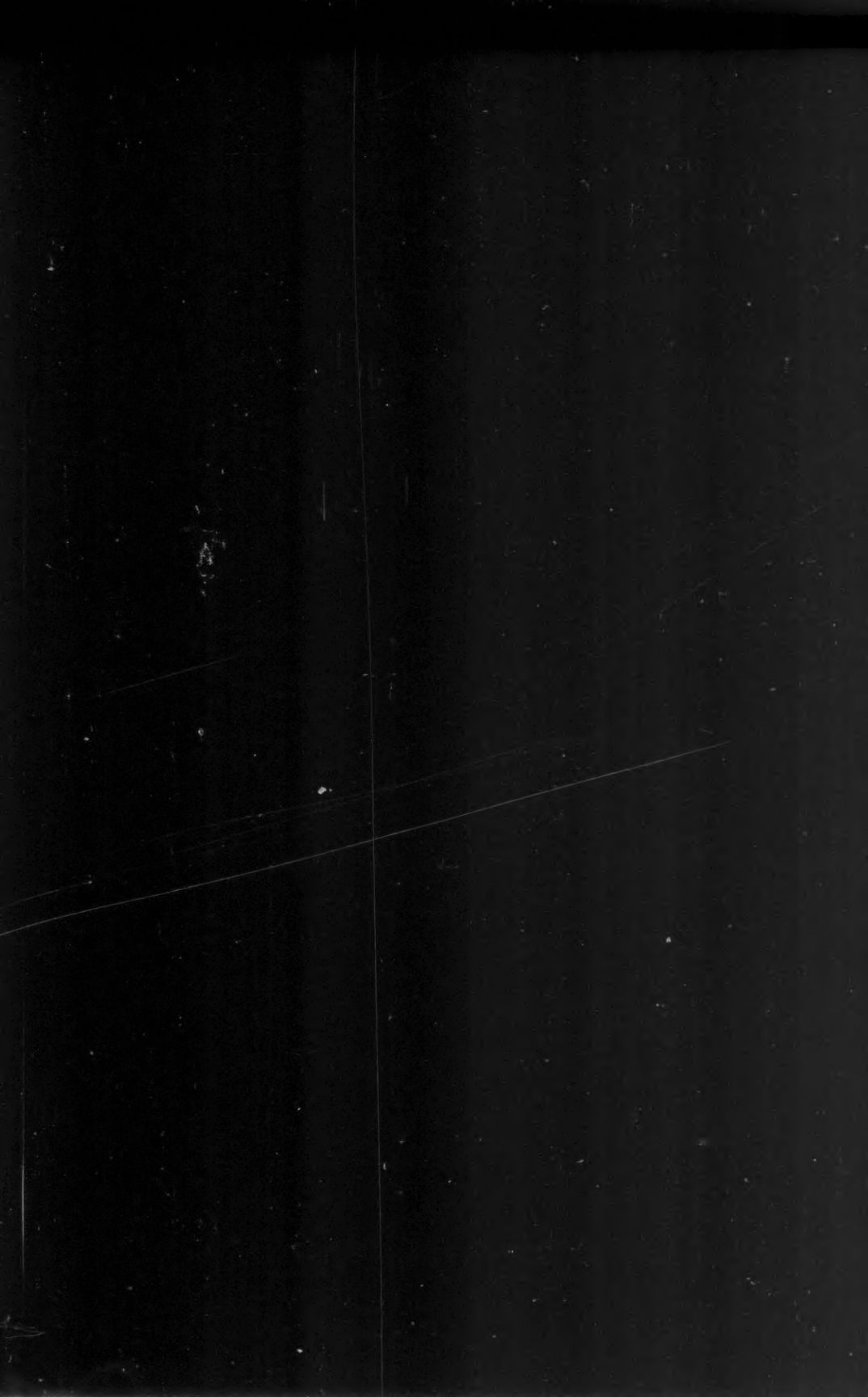
Machine Discovery of Protein Motifs ..... *Darrell Conklin* 125

Searching for Representations to Improve Protein Sequence Fold-Class Prediction ..... *Thomas R. Ioerger, Larry A. Rendell and Shankar Subramaniam* 151

Neural Networks for Full-Scale Protein Sequence Classification: Sequence Encoding with Singular Value Decomposition ..... *Cathy Wu, Michael Berry, Sailaja Shivakumar and Jerry McLarty* 177

Volume 21, No. 3, December 1995

The Parti-game Algorithm for Variable Resolution Reinforcement Learning in Multidimensional State-spaces ..... *Andrew W. Moore and Christopher G. Atkeson* 199

An Integration of Rule Induction and Exemplar-Based Learning for Graded Concepts ..... *Jianping Zhang and Ryszard S. Michalski* 235

Sample Compression, Learnability, and the Vapnik–Chervonenkis Dimension ..... *Sally Floyd and Manfred Warmuth* 269